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ABSTRACT

The validity of the Training Benefit Forecasting Method (TBFM) in a recreational vehicle service training setting was studied. Cost-benefit issues were associated with the Onan Service School change from a field-based Recreational Vehicle Generator Set training program to a customer-delivered self-instructional training program. Actual costs and outlays of both Onan field-based training and customer-delivered training were determined by research study personnel. An individual who was unfamiliar with any of the particulars of actual costs and activities associated with the training projects made cost benefit forecasts for the two options. The significance of the investigation was that while the net performance value desired by a training effort was zero (no change in quantity or quality), the TBFM was able to forecast and compare the costs. The customer-delivered option did cost less for the same outcome and was found to be the most cost-beneficial method. (Appendixes include a data chart and summary of actual data.) (YLB)

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TRAINING AND DEVELOPMENT RESEARCH CENTER

PROJECT NUMBER SIX

VALIDATION OF THE TRAINING BENEFIT FORECASTING METHOD: RECREATIONAL VEHICLE SERVICE TRAINING

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Project Number Six

Validation of the Training Benefit Forecasting Method:

Recreational Vehicle Service Training

The following is a summary of the cost-benefit issues associated with the Onan Service School change from an Onan field-based Recreational Vehicle (RV) Generator Set training program, to a customer delivered self-instructional training program.

The boundaries of the analysis were established as follows:

1. **Trainee Population**

   For analysis purpose, the population receiving training was determined to be 300.

   A. This was established using the number of U-haul dealer units that were interested in this training program as a start-up requirement for a new RV maintenance dimension of their organization. The assumption is that a minimum of one individual from each U-haul dealer unit would receive the training.

2. **Field-Based Training Time and Trainee Complement**

   This was established at the service school's planned training program length of 12 hours. The number of trainees per session was set at 16.

3. **Costs**

   Onan costs associated with the customer delivered field-based training were determined by an audit of the operating accounts and personnel work effort schedules of the service school.

4. **Forecasts**

   The forecast activities related to the cost-benefit issues associated with field-based and customer delivered training were carried out by TDRC personnel prior to and independent of any knowledge of actual outcomes of the audits and follow-up analysis.

Data and Analysis of Actual Costs and Outlays

Onan Field-Based Training

1. Number of training sessions required to train 300 trainees

   Calculation: $\frac{\text{Total \# of trainees}}{\text{\# trainees per session}} = \frac{300}{16} = 18.75$ rounded up to 19

2. Number of total training hours required to train 300 trainees

   Calculation: [# sessions] x [# hours per session] = 19 x 12 = 228 hours

3. Cost for preparation and on-site delivery of 19 sessions (228 hours of training)

   Calculation: [# sessions] x [cost per session (see Attachment I)]
   = 19 x $2,499 = $47,481

Customer Delivered Training

1. Number of training sessions required to train 300 trainees

   Calculation: [Total # of trainees] x 1* = 300 x 1 = 300

   *The number of books (5) interacted with in any combination of time increments, but the completion of all 5 texts is considered the completion of 1 session.

2. Number of training hours required to train 300 trainees

   Calculation: [# sessions] x [# hours per session*] = 300 x 3.75 = 1,125 hours

   *Service calculated that it would take an average trainee 3.75 hours to complete the 5 book series.

3. Cost of development and delivery of 300 sessions (1,125 hours of training)

   Calculation: This is calculated as a one-time cost (see Attachment I). With the exception of occasional low-cost revisions, all delivery costs are covered with a "cost coverage fee."

   Attachment I calculations = $17, 160

Cost-Benefit Analysis Rationale

The performance goal for the service school is to produce trained (knowledge-based) RV Gen Set mechanics regardless of the method.

Furthermore, the objective was to entertain options that reduce the cost of training the same numbers of recreation vehicle generator set mechanics.

The cost-benefit rationale in this study can be summarized as maintaining the customer's performance value and reducing Onan costs.

1. Net Performance Value = a - b = 0

   where a = b (# trained mechanics by Option B)
   b = a (# trained mechanics by Option A)

2. In that neither option yields direct performance value to Onan and the projected customer performance value is constant, the option with the lower costs yield the greatest benefit to Onan.

Actual Cost-Benefit Analysis

	Onan Field-Based (Option A)	Customer Delivered (Option B)
Net Performance Value	a - b = 0	a - b = 0
Cost	- $47,481	- $17,160
Benefit	($47,481)	($17,160)

Summary of the Forecast Data

The following data represents the forecast effort of an individual who was unfamiliar with any of the particulars of actual costs and activities associated with the training projects.

Performance Value

No value was submitted as the goals of the training efforts remained identical.

Option A

Costs of 1.5 day field-base training

Elements considered	Estimated Cost
Instructor salary (incl. fringe)	$220 per trip @ $110 per day
Travel expenses	$700 per trip
Per diem	$250 @ $125 per day
Administrative support costs (incl. fringe)	$188 per trip @ 16 hrs. x $11.75/hr.
On-site support costs	$350 per day
Material transportation costs	$300 per trip
Materials and consumables	$100 per trip
	$2,108 per trip

Average cost per trainee:

16 per trip = $\frac{\$2,108}{16}$ = $131.75

ESTIMATED TOTAL COST FOR 300 TRAINEES:

$131.75 x 300 = $39,525

Option B

Cost of Customer Delivered Training (total of 5 books)

Elements considered	Estimated Cost
Development:	
5 pkgs @ 35 pgs. each (average) = 210 pgs.	
210 pgs. @ 4 hours each = 840 hrs.	
840 hours = 105 days @ $110 per day	$11,550
Delivery:	
Reproduction:	
$1 per book @ 5 books = $5 per pkg.	
Mail:	
$.50 per book @ 5 books = $2.50 per pkg.	
Total of 300 pkgs @ $7.50 per pkg.	$2,250.00
Administrative Support Costs:	
Estimated 1 hour for each 25 pkgs. = 12 hrs.	
cost @ $11.75 per hr. (including fringe)	$1,211.75
ESTIMATED TOTAL COST FOR 300 TRAINEES	$15,011.75

Summary: Cost-Benefit Forecasts

	Onan Field-Based (Option A)	Customer Delivered (Option B)
Net Performance Value	N/A	N/A
- Costs	$39,525	$15,011
Benefits	$39,525	$15,011*

*Option B costs less for the same outcome. Therefore, the forecast is that at an estimated cost of $15,011, Option B is the most cost-beneficial method.

Conclusions

The significance of this investigation is that while the net performance value desired by a training effort was zero (no change in quantity or quality), the TBFM was able to forecast and compare the costs. Benefits of training options were viewed in terms of zero (0) being the most cost beneficial.

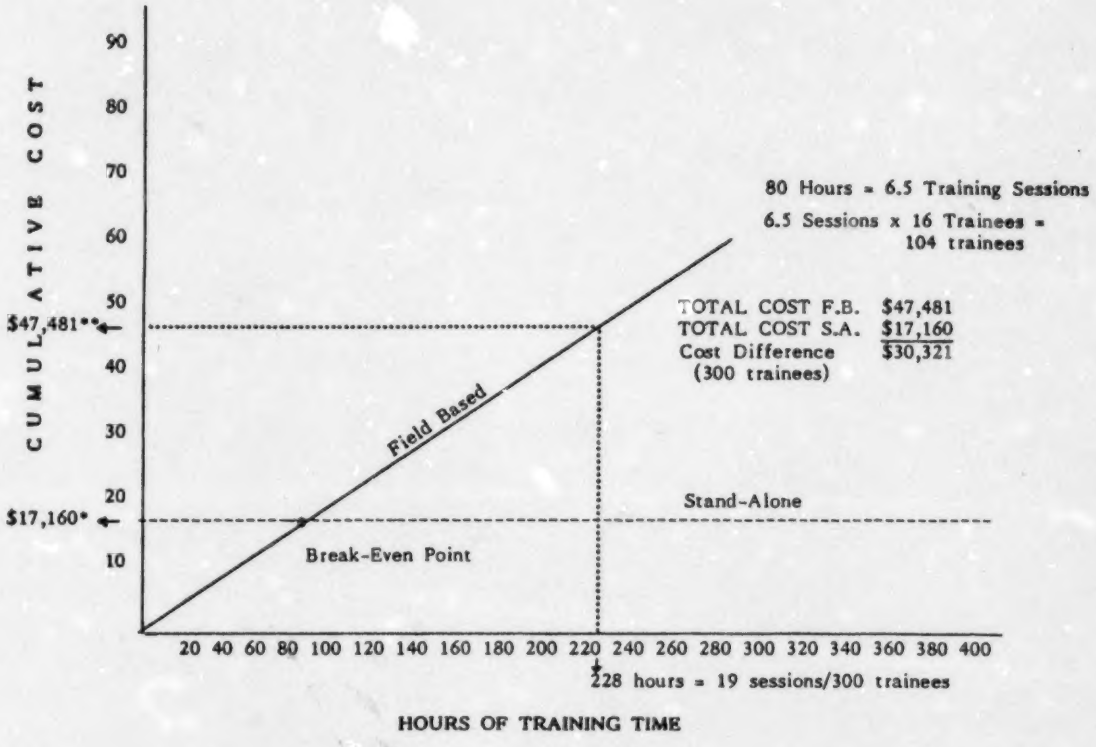
Utilizing the guidelines set down for forecasting costs (in this case it was the only variable as net performance value did not change), it was possible to accurately forecast the ultimate cost-benefit. Furthermore, differences in performance values (rather than net performance values) for each option provide a way of more accurately interpreting this low-cost means of benefit analysis.

Summary Comparison of Actual vs. Forecasted Financial Data

	Option A		Option B	
	Actual	Forecast	Actual	Forecast
Net Performance Value	0	N/A	0	N/A
- Costs	$47,481	$39,525	$17,160	$15,011
Benefits	$47,481	$39,525	$17,160	$15,011

APPENDIX A

THE RELATIONSHIP BETWEEN COSTS AND HOURS OF TRAINING IN FIELD BASED AND STAND ALONE R.V. SERVICE TRAINING



*Cost to deliver Stand-Alone Training to 300 people

**Cost to deliver Field-Based Training to 300 people

APPENDIX B

Cost of RV Field School (actually 1 1/2 days)

Estimate number of students - 16

Preparation for Instructor - 6 hrs @ $44 = (This field school is an extension of a factory school which has development work already completed)	264.00
2 Days Travel (salary) 16 hrs @ $44	704.00
No public relations	0
Telephone estimate	30.00
Postage - no charge to dept. (corporate expense)	0
Printing " " " " " "	0
No air freight unless we are late getting materials out	0
Meals	0
Facility Distributor Expenses	0
Equipment	0
Transportation & Lodging estimate(4 days @ 280)	1,120.00
Materials (see materials list) 18.83 x 16	381.28
	2,499.28

Present RV Stand Alone Package - Contains 5 books

To Write - 60 hrs per book(5 books) x $44.00/hr = Development Cost	13,200.00
4 hrs each book to proofread & read by others 4 x $44 x 5 =	880.00
Ongoing Revisions - 10 hrs per pkg per year 10 x $44 (add per year)	440.00
Artwork - 4 hrs each unit x $44.00	880.00
Slide Package & Script (1 package - 40 hrs @ $44.00	1,760.00
	17,160.00

We sell package for $5.00 ($1.00 per book)

APPENDIX C

ORDER FOR PRINTED MATERIAL

RECREATIONAL VEHICLE TRAINING

PLEASE HAVE MATERIAL AT THE SERVICE SCHOOL BY _____. THANK YOU!

GENERAL: Will require ( ) sets of the following materials - gathered and stapled together in sets of one each and in the following order:

BULLETINS:	A-866	Spec. Sheet (Aux.)
1.00 ea	AB-128	Nominal Ampere Ratings
	F-471	Bulletin "Onan Microfiche Program"
	F-508	RV "Elite Fleet" Brochure
	F-514	Solid State

ALSO ( ) EACH:

1.00	900-99	Technical Bulletin P-00P
2.67	900-0186	Wiring Diagram Manual for Mobile Applications
4.[illegible]	900-0337	RV Service Manual
1.00	913-0006	Onan Load Test Panel
2.67	932-0402	RV - Service Training Manual
N/C	900-0019	Tool Catalog
2.67	932-404	Generator Training Manual
1.00	913-0060	ET - Manual Transfer Switch - Installation Inst.
1.00	900-0329	Microfiche Training Guide
1.29	932-1000	Onan Safety Handbook
1.00	F-528	Quick Reference Service Card

Kathy Hokanson MN30-2030
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